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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,306	07/12/2001	Peter R. Nuytkens	12569-107	2085

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EXAMINER

VU, QUANG D

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 07/17/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,306

Applicant(s)

NUYTKENS ET AL.

Examiner

Quang D Vu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 11-22 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10 and 23-44, drawn to method of manufacturing a multichip module, classified in class 438, subclass 108.
- II. Claims 11-22, drawn to multichip module, classified in class 257, subclass 758.

During a telephone conversation with Jacob Erlich on 05/24/2002 a provisional election was made without traverse to prosecute the invention of group I, claims 11-22. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-10 and 23-44 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: the reference number 172 (page 30) is not in the drawing. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "114" has been used to designate both "chip 114" and "substrate 114". A proposed drawing correction or corrected drawings are required in reply to the Office action to

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avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because the abstract exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 17-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 17 recites the limitation "...each such layer..." in line 9. The scope of the claim is vague because it is not known of "each such layer" refers to the dielectric layers or the layers of electrically conductive material.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,161,093 to Gorczyca et al.

Regarding claim 17, Gorczyca et al. teach a multichip module comprising:
a plurality of integrated circuits (16) mounted on a substrate;
one or more dielectric layers (22, 32, 42) comprised of a flexible dielectric material; and
one or more layers of electrically conductive material (28, 38, 48) patterned to form multiple electrical interconnects between bonding pads on different ones of the integrated circuits, with each such layer placed on top on one of the dielectric layers (see figure 3).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 4,783,695 to Eichelberger et al.

Regarding claim 11, Eichelberger et al. teach an electrical circuit comprised of:

one or more dielectric layers (20, 30); and

one or more layers of electrically conductive material (25, 35) patterned to form multiple electrical interconnects, with each such layer placed on top of one of the dielectric layers (see figures 2, 3A and 3B).

Eichelberger et al. do not explicitly teach dielectric layer comprised of latex. Eichelberger et al. teach polymer dielectric layer (column 2, lines 3-7; column 9, lines 16-20). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a latex polymer dielectric layer, since latex is a known polymer material well suited for the intended use.

Regarding claim 12, Eichelberger et al. teach the electrically conductive material is copper (see figures 2, 3A and 3B; column 9, lines 8-9; column 10, lines 9-10).

Regarding claim 13, Eichelberger et al. teach the dielectric and conductive layers are used to connect individual bonding pads of different integrated circuits which are part of a multichip module (see figures 2, 3A and 3B).

Regarding claims 14, 15 and 16, the limitations cited in these claims are taken to be product by process limitations which do not carry weight in claim drawn to structure. A product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi

et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

7. Claims 18 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,161,093 to Gorczyca et al.

Regarding claim 18, Gorczyca et al. teach the dielectric layer is polyimide (column 11, lines 34-35). Gorczyca et al. do not teach the dielectric material is latex. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a latex polymer dielectric layer, since latex is a known polymer material well suited for the intended use.

Regarding claims 20, 21 and 22, the limitations cited in these claims are taken to be product by process limitations which do not carry weight in claim drawn to structure. A product by process claim directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See In re Fessman, 180 USPQ 324, 326 (CCPA 1974); In re Marosi et al., 218 USPQ 289, 292 (Fed. Cir. 1983); and particularly In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985), all of which make it clear that it is the patentability of the final structure of the product “gleaned” from the process steps, which must be determined in a “product by process” claim, and not the patentability of the process. See also MPEP 2113. Moreover, an old and

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obvious product produced by a new method is not a patentable product, whether claimed in “product by process” claims or not.

8. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,161,093 to Gorczyca et al. in view of US Patent No. 4,954,811 to Chatigny et al.

Regarding claim 19, Gorczyca et al. do not teach the dielectric material is a silicon based adhesive. However, Chatigny et al. teach dielectric silicon based adhesive (column 4, lines 19-20 and lines 44-47). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teaching of Chatigny et al. into the device taught by Gorczyca et al., since the dielectric silicon based adhesive is a flexible and sticky dielectric material. Furthermore, it tends to adhere layers together.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang D Vu whose telephone number is 703-305-3826. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

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QVU *QW*
July 12, 2002

Sara W Crane
Sara Crane
Primary Examiner